



According to recent fear-avoidance models¹, catastrophic misinterpretations of pain may lead to pain-related fear, which in turn can spur avoidance behaviour, meant to avert the perceived danger. Here, we show to what extent avoidance behaviour induces changes in threat beliefs², fear of pain³, pain experience. Participants were exposed to a painful heat stimulus and were divided into two groups, an *Avoidance group* (AG) and a *Control group* (CG). Participants in the AG, but not CG, were instructed they could avoid the full heat intensity at a certain point. In reality, the maximum heat intensity was the same in the previous phase for both groups. In the test phase avoidance behaviour was omitted.

Hypotheses

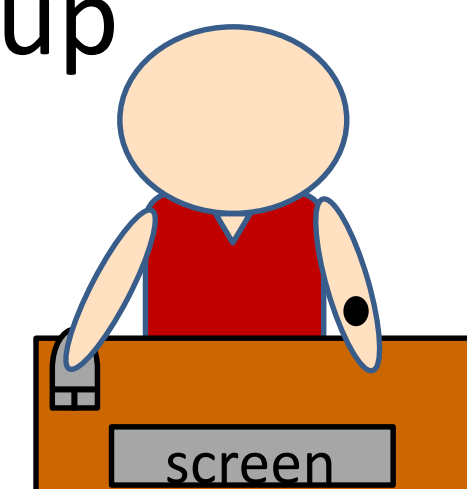
1. An increase in fear of pain at test phase compared to full intensity phase for AG, but not CG
2. An increase in threat beliefs at the end of the experiment for the AG, but not CG
3. More anticipated and experienced pain (intensity and unpleasantness) at test than during full intensity phase for AG, but not for CG

Materials and methods

Participants

- n = 64
- 26.11 ± 9.78 years
- pain-free

Setup



- thermode

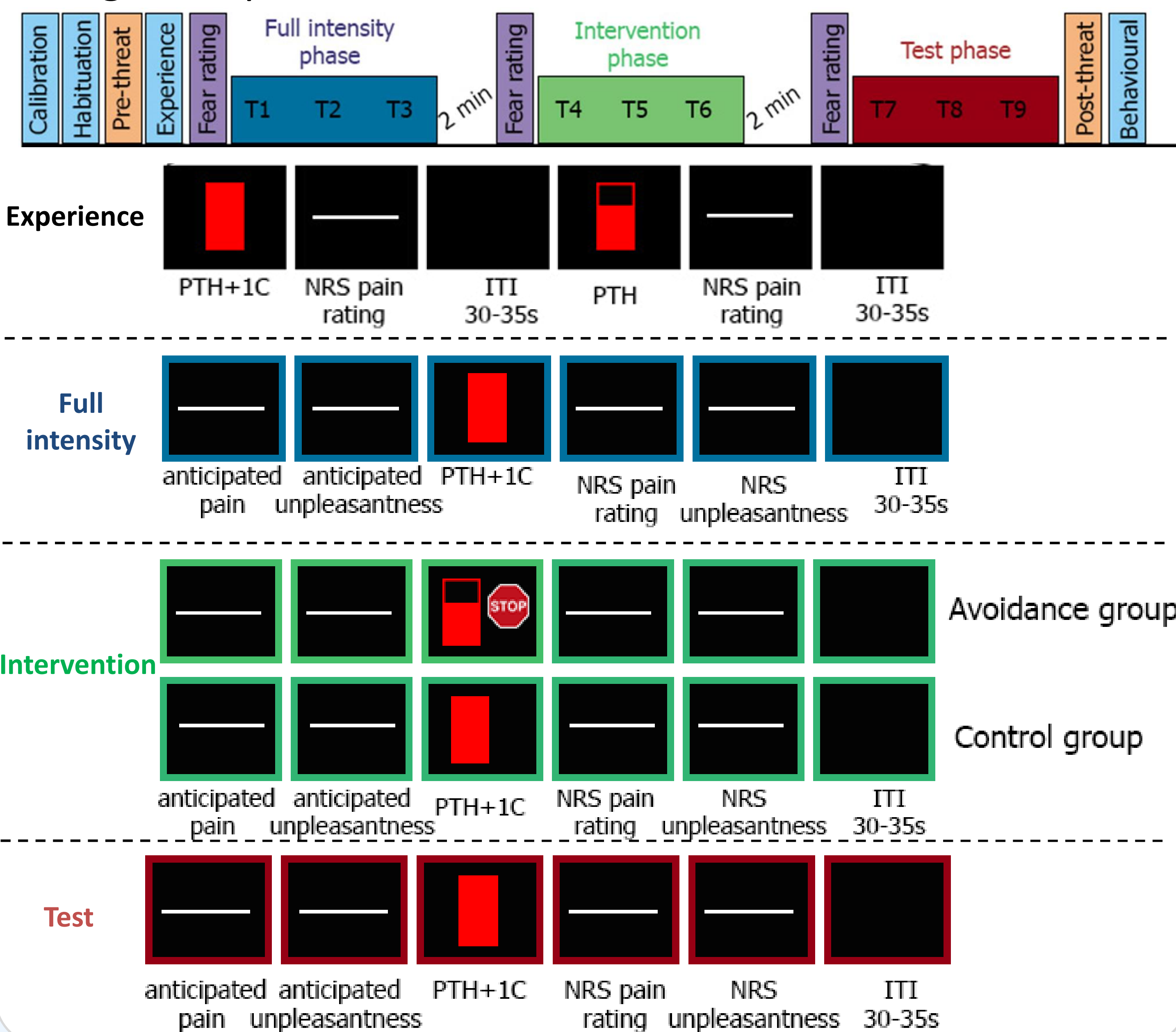
Stimuli

- phasic heat stimulus
- visual feedback
- probe

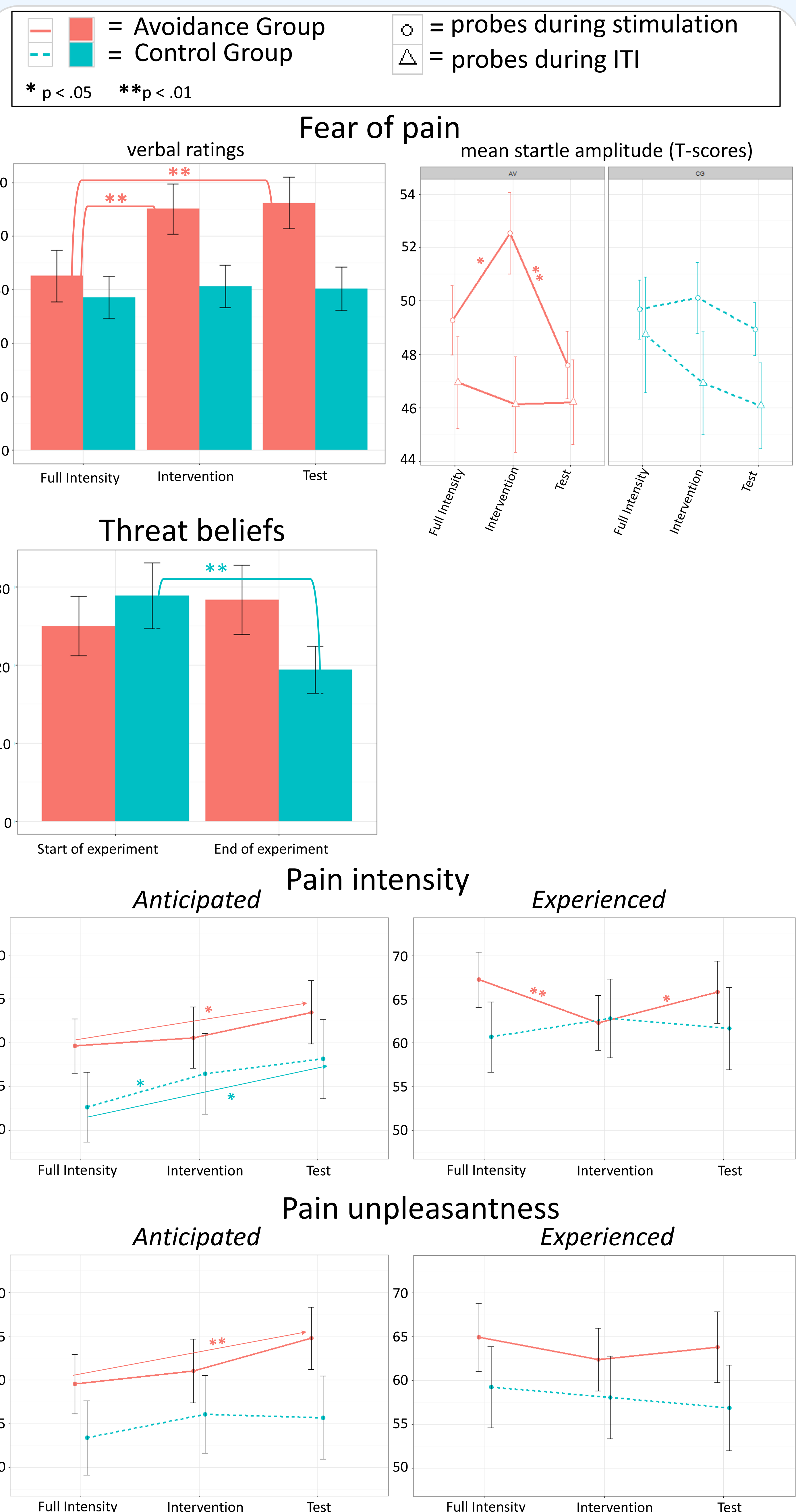
Measures

- anticipated fear of pain
 - anticipated and experienced threat
 - anticipated and experienced pain experience
 - eye blink startle responses (during stimulation and ITI)
- } NRS (0-100)

Design and procedure



Results



Conclusions / Discussion

- 1) We found support for the hypothesis that avoidance behaviour **increases fear of pain** at test phase for the AG.
 - 2) We did **not find an increase of threat beliefs** of the heat stimuli for AG, but the data showed a decrease of threat beliefs for CG.
 - 3) The present results confirm the third hypothesis partially: **increased anticipated unpleasantness** at test compared to full intensity phase for AG, but not CG.
- An interesting finding is that despite identical stimulus temperatures in the intervention phase, participants in the AG reported lower experienced pain intensity.

References

1. Vlaeyen, J.W.S., & Linton, S.J. (2012). Fear-avoidance model of chronic musculoskeletal pain: 12 years on. *PAIN*, 153, 1144-1147.
2. Lovibond P.F., Mitchell, C.J., Minard, E., Brady, A., & Menzies, R.G. (2009). Safety behaviours preserve threat beliefs: Protection from extinction of human fear conditioning by an avoidance response. *Behaviour Research and Therapy*, 47, 716-720.
3. Gangemi, A., Mancini, F., & van den Hout, M. (2012). Behaviour as information: if I avoid, then there must be a danger. *J. of Behav Ther and Exp Psychiatry*, 43(4), 1302-1308.

Contact: christine.vanvliet@kuleuven.be